

LISTING OF THE CLAIMS

1-36. (Cancelled)

37. (New) An abrasive carbon foam comprising:

an open-cell carbon foam; and

a carbide reactively bonded to the open-cell carbon foam;

wherein the abrasive carbon foam is impregnated with a polymer.

38. (New) The abrasive carbon foam of claim 37, wherein a surface of the abrasive carbon foam is sealed.

39. (New) The abrasive carbon foam of claim 37, wherein the carbide is silicon carbide.

40. (New) The abrasive carbon foam of claim 37, wherein the carbide is tungsten carbide.

41. (New) The abrasive carbon foam of claim 37, wherein the carbide is titanium carbide.

42. (New) The abrasive carbon foam of claim 37, wherein the polymer is an epoxy resin.

43. (New) An abrasive carbon foam comprising:

an open-cell carbon foam; and

a carbide reactively bonded to the open-cell carbon foam;

wherein the abrasive carbon foam is impregnated with a petroleum pitch.

44. (New) The abrasive carbon foam of claim 37, wherein a surface of the abrasive carbon foam is sealed.
45. (New) The abrasive carbon foam of claim 37, wherein the carbide is silicon carbide.
46. (New) The abrasive carbon foam of claim 37, wherein the carbide is tungsten carbide.
47. (New) The abrasive carbon foam of claim 37, wherein the carbide is titanium carbide.
48. (New) An abrasive carbon foam, comprising:
a semi-crystalline porous coal-based structure having a density ranging from about 0.1 to about 0.8 g/cm³, wherein the semi-crystalline porous coal-based structure includes a metallic carbide reaction bonded to the porous coal-base structure for improving abrasive character of the abrasive carbon foam, and wherein the relative amount of reaction bonded carbide to the semi-crystalline porous coal-based structure is an amount ranging from about 1 to about 10% by volume.
49. (New) The abrasive carbon foam of claim 48, wherein the density ranges from about 0.2 to about 0.5 g/cm³.

50. (New) The abrasive carbon foam of claim 48, wherein the density ranges from about 0.3 to about 0.4 g/cm³.
51. (New) The abrasive carbon foam of claim 48, wherein the carbide is tungsten carbide.
52. (New) The abrasive carbon foam of claim 48, wherein the carbide is silicon carbide.
53. (New) The abrasive carbon foam of claim 48, wherein the carbide is titanium carbide.